

## CV – Dylan Taatjes

Professor  
University of Colorado  
Department of Biochemistry  
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web: [www.colorado.edu/chemistry/taatjeslab/](http://www.colorado.edu/chemistry/taatjeslab/)

### EDUCATION and TRAINING:

B.S. Chemistry	Calvin College—Grand Rapids, MI	1990 – 1994
Ph D. Chemistry	University of Colorado—Boulder, CO	1994 – 1998
	<i>Advisor: Dr. Tad Koch</i>	
Postdoc	University of California—Berkeley, CA	1999 – 2004
	<i>Advisor: Dr. Robert Tjian</i>	

### AWARDS (partial list)

Colorado Doctoral Fellowship, 1994-1995  
John S. Meek Teaching Award, University of Colorado, 1995  
University of Colorado Fellowship, 1997-1998  
University of Colorado Research and Creative Work Award, 1997  
ACS Medicinal Chemistry Predoctoral Fellowship, 1997-1998  
American Cancer Society Postdoctoral Fellowship, 2000-2002  
Ellison Medical Foundation New Scholar Award, 2006-2010  
American Cancer Society Research Scholar Award, 2009-2013

### PROFESSIONAL SOCIETIES

University of Colorado Cancer Center  
ASBMB

### PUBLICATIONS: *From work prior to becoming Assistant Professor*

#### Research Articles (peer reviewed):

1. Taatjes, DJ; Gaudiano, G; Resing, K; Koch, TH. Alkylation of DNA by the anthracycline, antitumor drugs adriamycin and daunomycin. *J Med Chem.* 1996, 39, 4135-4138.
2. Taatjes, DJ; Gaudiano, G; Resing, K; Koch, TH. A redox pathway leading to the alkylation of DNA by the anthracycline, antitumor drugs, Adriamycin and Daunomycin. *J Med Chem.* 1997, 40, 1276-1286.
3. Fenick, DJ; Taatjes, DJ; Koch, TH. Doxoform and Daunoform: anthracycline-formaldehyde conjugates toxic to resistant tumor cells. *J Med Chem.* 1997, 40, 2452-2461.

4. Taatjes, DJ; Gaudiano, G; Koch, TH. Production of formaldehyde and DNA-adriamycin or – daunomycin adducts, initiated through redox chemistry of DTT/iron, xanthine oxidase/NADH/iron, or glutathione/iron. *Chem Res Toxicol.* 1997, 10, 953-961.
5. Taatjes, DJ; Fenick, DJ; Gaudiano, G; Koch, TH. A redox pathway leading to the alkylation of nucleic acids by doxorubicin and related anthracyclines: application to the design of antitumor drugs for resistant cancer. *Curr Pharm Des.* 1998, 4, 217-232.
6. Taatjes, DJ; Fenick, DJ; Koch, TH. Epidoxoform: a hydrolytically more stable anthracycline-formaldehyde conjugate, toxic to resistant tumor cells. *J Med Chem.* 1998, 41, 1306-1314.
7. Taatjes, DJ; Koch, TH. Growth inhibition, nuclear uptake, and retention of anthracycline-formaldehyde conjugates in prostate cancer cells relative to clinical anthracyclines. *Anticancer Res.* 1999, 19, 1201-1208.
8. Podell, E; Harrington, D; Taatjes, DJ; Koch, TH. Crystal structure of Epidoxorubicin-formaldehyde virtual crosslink to DNA and evidence of its formation in human breast cancer cells. *Acta Cryst.* 1999, D55, 1516-1523.
9. Taatjes, DJ; Fenick, DJ; Koch, TH. Nuclear targeting and nuclear retention of anthracycline-formaldehyde conjugates implicates DNA covalent bonding in the cytotoxic mechanism of anthracyclines. *Chem Res Toxicol.* 1999, 12, 588-596. [Cover]
10. Kato, S; Burke, PJ; Fenick, DJ; Taatjes, DJ; Bierbaum, VM; Koch, TH. Mass spectrometric measurement of formaldehyde generated in breast cancer cells upon treatment with anthracycline antitumor drugs. *Chem Res Toxicol.* 2000, 13, 509-516.
11. Dernell, WS; Powers, BE; Taatjes, DJ; Cogan, P; Gaudiano, G; Koch, TH. Evaluation of the epidoxorubicin-formaldehyde conjugate, Epidoxoform, in a mouse mammary carcinoma model. *Cancer Invest.* 2002, 20, 712-723.
12. Taatjes, DJ; Näär, AM; Andel, F; Nogales, E; Tjian, R. Structure, function, and activator-induced conformations of the CRSP coactivator. *Science* 2002, 295, 1058-1062.
13. Näär, AM; Taatjes, DJ; Zhai, W; Tjian, R. Human CRSP interacts with RNA polymerase II CTD and adopts a specific CTD-bound conformation. *Genes Dev.* 2002, 16, 1339-1344.
14. Taatjes, DJ; Schneider-Poetsch, T; Tjian, R. Distinct conformational states of nuclear receptor-bound CRSP–Med complexes. *Nat Struct Mol Biol.* 2004, 11, 664-671.
15. Taatjes, DJ; Tjian, R. Structure and function of CRSP/Med2: a promoter-selective transcriptional coactivator complex. *Mol Cell.* 2004, 14, 675-683.

**Review Articles (peer reviewed):**

16. Taatjes, DJ; Koch, TH. Nuclear targeting and retention of anthracycline antitumor drugs in sensitive and resistant tumor cells. *Curr Med Chem.* 2001, 8, 15-29.
17. Taatjes, DJ; Marr, MT; Tjian, R. Regulatory diversity among metazoan co-activator complexes. *Nat Rev Mol Cell Biol.* 2004, 5, 403-410.

**Patents:**

18. “New anthracycline anti-tumor drugs with enhanced cytotoxicity: compounds, compositions, and methods,” Dylan J. Taatjes, David J. Fenick, Tad H. Koch Inventors, US Patent No. 6,677,309.

**PUBLICATIONS:** *From work as assistant professor; asterisk (\*) denotes publications in which I am corresponding author.*

### Research Articles (peer reviewed):

- 19\* Meyer, KD; Donner, AJ; Knuesel, MT; York, AG; Espinosa, JM; Taatjes, DJ. Cooperative activity of CDK8 and GCN5L within Mediator directs tandem phosphoacetylation of histone H3. *EMBO J.* 2008, 27, 1447-1457.
- 20\* Knuesel, MT; Meyer, KD; Donner, AJ; Espinosa JM; Taatjes, DJ. The human CDK8 subcomplex is a histone kinase that requires Med12 for activity and can function independently of Mediator. *Mol Cell Biol.* 2009, 29, 650-661.
- 21\* Knuesel, MT; Meyer, KD; Bernecky, C; Taatjes, DJ. The human CDK8 subcomplex is a molecular switch that controls Mediator co-activator function. *Genes Dev.* 2009, 23, 439-451.
- 22 Donner, AJ; Ebmeier, CC; Taatjes, DJ; Espinosa JM. CDK8 is a positive regulator of transcriptional elongation within the serum response network. *Nat Struct Mol Biol.* 2010, 17, 194-201. [Cover]
- 23\* Ebmeier, CC; Taatjes, DJ. Activator-Mediator binding regulates Mediator-cofactor interactions. *Proc Natl Acad Sci. USA.* 2010, 107, 11283-11288.
- 24\* Meyer, KD; Lin, S; Bernecky, C; Gao, Y; Taatjes, DJ. p53 activates transcription by directing structural shifts in Mediator. *Nat Struct Mol Biol.* 2010, 17, 753-760.
- 25 De Carlo, S; Lin, S; Taatjes, DJ; Hoenger, A. Molecular basis of transcription initiation in Archaea. *Transcription* 2010, 1, 103-111. [Cover]
- 26\* Kagey, M; Newman, J; Bilodeau, S; Zhan, Y; van Berkum, NL; Orlando, DA; Ebmeier, CC; Goossens, J; Rahl, P; Levine, S; Taatjes, DJ\*; Dekker, J\*; Young, RA\*. Mediator and Cohesin connect gene expression and chromatin architecture. *Nature* 2010, 467: 430-435.

### Review Articles (peer reviewed) and invited Commentaries:

- 27\* Panning, B; Taatjes, DJ. Transcriptional Regulation: It takes a Village. *Mol Cell* 2008, 31: 622-629.
- 28\* Taatjes, DJ. The human Mediator complex: a versatile, genome-wide regulator of transcription. *Trends Biochem Sci.* 2010, 35: 315-322.
- 29\* Knuesel, MT; Taatjes, DJ. Mediator and post-recruitment regulation of RNA polymerase II. *Transcription* 2011, 2: 28-31.

**PUBLICATIONS: From work as Associate Professor (2011 - 2017) and full professor (2018 – present). Asterisk (\*) denotes publications in which I am corresponding author.**

### Research Articles (peer reviewed):

- 30\* Bernecky, C; Grob, P; Ebmeier, CC; Nogales, E; Taatjes, DJ. Molecular architecture of the human Mediator–RNA polymerase II–TFIIF assembly. *PLoS Biol.* 2011, 9: e1000603.
- 31 Taylor, DJ; Podell, EA; Taatjes, DJ; Cech, TR. Multiple POT1-TPP1 proteins coat and compact long telomeric ssDNA. *J Mol Biol.* 2011, 410: 10-17.
- 32\* Bernecky, C; Taatjes, DJ. Activator–Mediator binding stabilizes RNA polymerase II orientation within the human Mediator–RNA polymerase II–TFIIF assembly. *J Mol Biol.* 2012, 417: 387 – 394.
- 33 Schwartz, J; Ebmeier, CC; Podell, EA; Heimiller, J; Taatjes, DJ; Cech, TR. FUS binds the CTD of RNA polymerase II and regulates its phosphorylation at Ser2. *Genes Dev.* 2012, 26: 2690 – 2695.

- 34 Bancerek, J; Poss, ZC; Steinparzer, I; Sedlyarov, V; Pfaffenwimmer, T; Mikulic, I; Dolken, L; Strobl, B; Muller, M; Taatjes, DJ; Kovarik, P. CDK8 Kinase Phosphorylates Transcription Factor STAT1 to Selectively Regulate the Interferon Response. *Immunity* 2013, 38: 250 – 262.
- 35 Davis, MA; Larimore, EA; Fissel, BM; Swanger, J; Taatjes, DJ; Clurman, BE. The SCF-FBW7 ubiquitin ligase degrades MED13 and MED13L and regulates CDK8 module association with Mediator. *Genes Dev.* 2013, 27: 151 – 156.
- 36 Lai, F; Orom, UA; Cessaroni, M; Beringer, M; Taatjes, DJ; Blobel, G; Shiekhattar, R. Long non-coding RNAs associate with Mediator to enhance chromatin architecture and transcription. *Nature* 2013, 494: 497 – 501.
- 37 He, Y; Fang, J; Taatjes, DJ; Nogales, E. Structural visualization of key steps in human transcription initiation. *Nature* 2013, 495: 481 – 486.
- 38\*Lin, S; Karoly, ED; Taatjes, DJ. The human  $\Delta$ Np53 isoform triggers metabolic and gene expression changes that activate mTOR and alter mitochondrial function. *Ageing Cell* 2013, 12: 863 – 872.
- 39 Bunch, H; Zheng, X; Burkholder, A; Dillon, S; Motola, S; Birrane, G; Ebmeier, CC; Levine, S; Fargo, D; Hu, G; Taatjes, DJ; Calderwood, SK. TRIM28 regulates RNA polymerase II promoter proximal pausing and pause release. *Nat Struct Mol Biol.* 2014, 21: 876 – 883.
- 40 Pelish, HE; Liau, BB; Nitulescu, I; Tangpeerachaikul, A; Poss, ZC; DaSilva, D; Caruso, B; Arefolov, A; Fadeyi, O; Christie, A; Du, K; Banka, D; Schneider, EV; Jestel, A; Zou, G; Si, C; Ebmeier, CC; Bronson, RT; Krivtsov, AV; Myers, AG; Kohl, N; Kung, A; Armstrong, S; Lemieux, M; Taatjes, DJ; Shair, MD. Mediator kinase inhibition further activates super-enhancer-associated genes in AML. *Nature* 2015, 526: 273 – 276.
- 41 Luo, J; Cimermancic, P; Viswanath, S; Ebmeier, CC; Kim, B; Dehecq, M; Raman, V; Sali, A; Taatjes, DJ; Hahn, S; Ranish, J. Architecture of the human and yeast general transcription and DNA repair factor TFIIH. *Mol Cell* 2015, 59: 794 – 806.
- 42\*Poss, ZC; Ebmeier, CC; Odell, AT; Tangpeerachaikul, A; Lee, T; Pelish, HE; Shair, MD; Dowell, RD; Old, WM; Taatjes, DJ. Identification of Mediator kinase substrates in human cells using cortistatin A and quantitative phosphoproteomics. *Cell Rep.* 2016, 15: 436 – 450.
- 43\*Lerner, E; Chung, S; Allen, BL; Wang, S; Lee, JJ; Lu, SW; Grimaud, LW; Ingargiola, A; Michalet, X; Alhadid, Y; Borukhov, S; Strick, T; Taatjes, DJ; Weiss, S.\* A backtracked and paused transcription initiation intermediate of *Escherichia Coli* RNA polymerase. *Proc Natl Acad Sci. USA.* 2016, 113: E6562 – 6571.
- 44\*Audetat, KA; Galbraith, MD; Odell, AT; Lee, T; Pandey, A; Espinosa, JM; Dowell, RD; Taatjes, DJ. A kinase-independent role for CDK19 in p53 response. *Mol Cell Biol.* 2017, 37: e00626-16.
- 45 Guan, X; Chaffey, PK; Ruan, Y; Hurd, CK; Taatjes, DJ; Tan, Z. Chemical synthesis of the multiply phosphorylated and biotinylated N-terminal transactivation domain of human p53 (p53TAD). *Synlett.* 2017, 28: 1917 - 1922.
- 46\*Ebmeier, CC; Erickson, B; Allen, BL; Allen, MA; Kim, H; Fong, N; Jacobsen, JR; Liang, K; Shilatifard, A; Dowell, RD; Old, WM; Bentley, DL\*; Taatjes, DJ\*. Human TFIIH kinase CDK7 regulates transcription-associated chromatin modifications. *Cell Rep.* 2017, 20: 1173 - 1186.
- 47 Boija, A; Klein, IA; Sabari, BR; Dall'Agnese, A; Coffey, EL; Zamudio, AV; Li, CH; Shrinivas, K; Manteiga, J; Hannett, NM; Abraham, BJ; Schuijers, J; Afeyan, L; Guo, YE; Rimel, JK; Fant, CB; Lee, TI; Taatjes, DJ; Young, RA. Transcription factors activate genes through the phase separation capacity of their activation domains. *Cell* 2018, 175: 1842 – 1855.
- 48 Guard, SE; Poss, ZC; Ebmeier, CC; Pagratis, M; Simpson, H; Taatjes, DJ; Old, WM. The nuclear interactome of DYRK1A reveals a functional role in DNA damage repair. *Sci Rep.* 2019, 9: 6539.

- 49 Guo, YE; Manteiga, JC; Henninger, J; Sabari, BR; Dall'Agnesse, A; Hannett, NM; Spille, J-H; Afeyan, LK; Zamudio, AV; Shrinivas, K; Abraham, BJ; Boija, A; Decker, TM; Rimel, JK; Fant, CB; Lee, TI; Cisse, II; Sharp, PA; Taatjes, DJ; Young, RA. RNA polymerase II phosphorylation regulates a switch between transcriptional and splicing condensates. *Nature* 2019, 572: 543 – 548.
- 50\*Steinparzer, I; Sedlyarov, V; Rubin, JD; Eislmayr, K; Galbraith MD; Levandowski, CB; Vcelkova, T; Sneezum, L; Wascher, F; Amman, F; Kleinova, R; Bender, H; Andrysik, Z; Espinosa, JM; Superti-Furga, G; Dowell, RD; Taatjes, DJ;\* Kovarik, P.\* Transcriptional responses to IFN $\gamma$  require Mediator kinase-dependent pause release and mechanistically distinct CDK8 and CDK19 functions. *Mol Cell* 2019, 76: 485 – 499.
- 51 Zamudio, AV; Dall'Agnesse, A; Henninger, JE; Manteiga, JC; Afeyan, LK; Hannett, NM; Coffey, EL; Li, CH; Oksuz, O; Boija, A; Klein, IA; Sabari, BR; Hawken, SW; Spille, JH; Decker, TM; Cisse, II; Abraham, BJ; Lee, TI; Taatjes, DJ; Schuijers, J; Young, RA. Mediator condensates localize signaling factors to key cell identity genes. *Mol Cell* 2019, 76: 753 – 766.
- 52\*Fant, CB; Levandowski, CB; Gupta, K; Maas, ZL; Moir, JT; Rubin, JD; Sawyer, A; Esbin, M; Rimel, JK; Luyties, O; Marr, MT; Berger, I; Dowell, RD; Taatjes, DJ. TFIID enables RNA polymerase II promoter-proximal pausing. *Mol Cell* 2020, 78: 785 – 793.
- 53 Klein, IA; Boija, A; Afeyan, LK; Hawken, SW; Fan, M; Dall'Agnesse, A; Oksuz, O; Henninger, JE; Shrinivas, K; Sabari, BR; Sagi, I; Clark, V; Platt, J; Kar, M; McCall, P; Zamudio, AV; Manteiga, JC; Coffey, EL; Li, CH; Hannett, NM; Guo, YE; Decker, TM; Lee, TI; Zhang, T; Weng, JK; Taatjes, DJ; Chakraborty, A; Sharp, PA; Chang, YT; Hyman, AA; Gray, NS; Young, RA. Partitioning of cancer therapeutics in nuclear condensates. *Science* 2020, 368: 1386 – 1392.
- 54\*Rimel, JK; Poss, ZC; Erickson, B; Maas, ZL; Ebmeier, CC; Johnson, JL; Decker, T-M; Yaron, TM; Bradley, MJ; Hamman, KB; Hu, S; Malojcic, G; Marineau, JJ; White, PW; Brault, M.; Tao, L.; DeRoy, P; Clavette, C; Nayak, S; Damon, LJ; Kaltheuner, IH; Bunch, H; Cantley, LC; Geyer, M; Iwasa, J; Dowell, RD; Bentley, DL; Old WM;\* Taatjes, DJ.\* Selective inhibition of CDK7 reveals high-confidence targets and novel mechanisms for TFIID function in transcription. *Genes Dev* 2020; 34: 1452 – 1473.
- 55 Tomko, EJ; Luyties, O; Rimel, JK; Tsai, C; Fuss, JO; Fishburn, J; Hahn, S; Tsutakawa, SE; Taatjes, DJ; Galburt, EA. The role of XPB/Ssl2 dsDNA translocation processivity in transcription start-site scanning. *J Mol Biol* 2021; 433: 166813.
- 56 Rubin, JD; Stanely, JT; Sigauke, RS; Levandowski, CB; Maas, ZL; Westfall, J; Taatjes, DJ; Dowell, RD. Transcription factor enrichment analysis (TFEA): Quantifying the activity of hundreds of TFs from a single experiment. *Commun Biol* 2021; 4: 661.
- 57\*Levandowski, CB; Jones, T; Gruca, M; Ramamoorthy, S; Dowell, RD;\* Taatjes, DJ.\* The naturally occurring  $\Delta 40p53$  isoform inhibits eRNA transcription and enables context-specific regulation during p53 activation. *PLoS Biol* 2021; 19: e3001364.
- 58\*Allen, BL; Quach, K; Jones, T; Levandowski, CB; Ebmeier, CC; Rubin, JD; Read, T; Dowell, RD; Schepartz, A\*; Taatjes, DJ\*. Suppression of p53 response by targeting p53–Mediator binding with a stapled peptide. *Cell Rep* 2022, 39: 110630.
- 59 Bassett, J; Rimel, JK; Basu, S; Basnet, P; Luo, J; Engel, KL; Nagel, MT; Woyciehowsky, A; Ebmeier, CC; Kaplan, CD; Taatjes, DJ; Ranish, JA. Systematic mutagenesis of TFIID subunit p52/Tfb2 identifies residues required for XPB/Ssl2 subunit function and genetic interactions with TFB6. *J Biol Chem* 2022, 298: 102433.
- 60 Johnson, JL; Yaron, TM; Huntsman, EM; Kerelsky, A; Song, J; Regev, A; Lin, T-Y; Liberatore, K; Cizin, DM; Cohen, BM; Vasan, N; Ma, Y; Krismer, K; Torres Robles, J; van de Kooij, B; van Klimmeren, AE; Andree-Busch, N; Kaufer, N; Dorovkov, MV; Ryazanov, AG; Takagi, Y; Kastenhuber, ER; Goncalves, MD; Hopkins, BD; Elemento, O; Taatjes, DJ; Maucuer, A; Yamashita, A; Degterev, A; Linding, R; Blenis, J; Hornbeck, PV; Turk, BE; Yaffe, MB; Cantley,

LC. A global atlas of substrate specificities for the human serine/threonine kinome. *Nature* 2023, 613: 759 - 766.

**Invited Review Articles (peer reviewed) and invited Commentaries:**

- 61\*Phillips, A; Taatjes, DJ. Small molecule probes to target the human Mediator complex. *Isr J Chem.* 2013, 53: 588 – 595.
- 62\*Poss, ZC; Ebmeier, CC; Taatjes, DJ. The Mediator complex and transcription regulation. *Crit Rev Biochem Mol Biol.* 2013, 48: 575 – 608.
- 63\*Lin, SC; Taatjes, DJ.  $\Delta$ Np53 and Aging. *Aging (Albany NY)* 2013, 5: 717 – 718.
- 64\*Sennett, NC; Taatjes, DJ. Mediator redefines itself. *Cell Res.* 2014, 24: 775 – 776.
- 65\*Allen, BL; Taatjes, DJ. The Mediator complex: a central integrator of transcription. *Nat Rev Mol Cell Biol.* 2015, 16: 155 – 166.
- 66\*Fant, CB; Taatjes, DJ. All in the family: A portrait of a nuclear receptor co-activator complex. *Mol Cell* 2015, 57: 952 – 954.
- 67\*Rubin, JD; Taatjes, DJ. Molecular Biology: Mediating transcription and RNA export. *Nature* 2015, 526: 199 – 200.
- 68\*Passmore, LA; Taatjes DJ. Macromolecular complexes in transcription and co-transcriptional RNA processing. *J Mol Biol.* 2016, 428: 2539 – 2541.
- 69 Alhadid, Y; Chung, S; Lerner, E; Taatjes, DJ; Borukhov, S; Weiss, S. Studying transcription initiation by RNA polymerase with diffusion-based single molecule fluorescence. *Protein Sci.* 2017, 26: 1278 - 1290.
- 70\*Taatjes, DJ. Transcription factor–Mediator interfaces: multiple and multi-valent. *J Mol Biol.* 2017, 429: 2996 - 2998.
- 71\*Harper, TM; Taatjes, DJ. The complex structure and function of Mediator. *J Biol Chem.* 2018, 293: 13778 - 13785.
- 72\*Taatjes, DJ. The complex SAGA of TFIID function on genomic DNA. *Mol Cell* 2017, 68: 1 - 2.
- 73\*Rimel, JK; Taatjes, DJ. The essential and multi-functional TFIIH complex. *Protein Sci.* 2018, 27: 1018 - 1037.
- 74\*Goodrich, JA; Taatjes, DJ. Gene regulation: a new phase in transcription. *Nature* 2018, 558: 197 - 198.
- 75\*Fant, CB; Taatjes, DJ. Regulatory functions of the Mediator kinases CDK8 and CDK19. *Transcription* 2019, 10: 76 – 90.
- 76\*Schier, AC; Taatjes, DJ. Structure and mechanism of the RNA polymerase II transcription machinery. *Genes Dev.* 2020, 34: 465 – 488.
- 77\*Taatjes, DJ. RNA polymerase II transcription. *J Mol Biol* 2021, 433: 167037.
- 78\*Schier, A; Taatjes, DJ. Everything at once: Cryo-EM yields remarkable insights about human RNA polymerase II transcription. *Nat Struct Mol Biol* 2021; 28: 540 - 543.
- 79\*Palacio, M; Taatjes DJ. Merging established mechanisms with new insights: Condensates, hubs, and the regulation of RNA polymerase II transcription. *J Mol Biol* 2022; 433: 167216.
- 80\*Luyties, O; Taatjes, DJ. The Mediator kinase module: an interface between cell signaling and transcription. *Trends Biochem Sci* 2022, 47: 314 - 327.
- 81\*Richter, WF; Nayak, S; Iwasa, J; Taatjes, DJ. The Mediator complex as a master regulator of transcription by RNA polymerase II. *Nat Rev Mol Cell Biol* 2022, 23: 732 - 749.
- 82\*Clopper, KC; Taatjes, DJ. Chemical inhibitors of transcription-associated kinases. *Curr Opin Chem Biol* 2022, 70: 102186.

83\*Nayak, S; Taatjes DJ. SnapShot: Mediator Complex Structure. *Cell* 2022, 185: 3458.

**Patents:**

Provisional Patent Application No 63/073,245

Title: *Methods and Compositions for Modifying Transcription Factor Activity by Targeting the Human Mediator Complex Using Cell Penetrating Memetic Peptides and Methods of Treating Cancer Using the Same*

CU Reference No.: CU5149B-PPA1

Filed Sept. 1, 2020

**INVITED TALKS (partial list): *Since becoming Assistant Professor***

2005

Calvin College, Dept. of Chemistry and Biochemistry 10/05

Hope College, Dept. of Biochemistry 10/05

2006

ACS/Colorado Cancer Center Mechanisms of Aging Conference, Denver, CO 6/27/06

2007

UCHSC Dept. of Biochemistry/Molecular Genetics 1/25/07

Colorado Cancer Center Conference on Developmental Therapeutics 8/24/07

2008

UCHSC Dept. of Molecular Biophysics 3/26/08

FASEB Conference: “Transcriptional Regulation during Cell Growth, Differentiation, and Development” Snowmass, CO 6/22/08 – 6/27/08.

2009

Cold Spring Harbor Laboratory “Eukaryotic Gene Expression” summer course, Cold Spring Harbor, NY 7/29/09.

Conference: “The Regulation and Transcription of Eukaryotic Genes” Glen Cove, NY 7/31/09 – 8/2/09.

Cold Spring Harbor Laboratory “Mechanisms of Eukaryotic Transcription” Meeting, Cold Spring Harbor, NY 8/25/09 – 8/29/09.

2010

University of Colorado Cancer Center, Scientific Retreat, Westminster, CO 3/19/10.

Brown University, Dept. of Biochemistry, Molecular & Cell Biology 3/24/10

ASBMB 2010 Annual Meeting, session on Chromatin and Transcription. Anaheim, CA 4/24/10 – 4/28/10

Ellison Medical Foundation Award Talk: Colloquium on the Biology of Aging, Woods Hole, MA 8/11/10 – 8/13/10.

ASBMB Special Symposium, “Transcriptional Regulation By Chromatin and RNA Polymerase II” Lake Tahoe, CA 9/30/10 – 10/4/10.

2011

UCLA–Jonsson Cancer Center, Gene Regulation Program 4/12/11.

Texas A&M University, Dept. of Molecular & Cellular Medicine 4/19/11.

**INVITED TALKS (partial list): *Since becoming Associate Professor and Full professor***

2012

Keystone Symposia on Molecular and Cellular Biology “Structural Biology of Cellular Processes: from Atoms to Cells” Keystone, CO 1/22/12 – 1/27/12.

- Fred Hutchinson Cancer Research Center, Division of Basic Sciences, Seattle, WA, 3/13/12.  
Purdue University, Dept. of Biochemistry, West Lafayette, IN, 3/20/12  
ASBMB 2012 Annual Meeting, session on Fundamental Mechanisms of Gene Regulation. San Diego, CA 4/21/12 – 4/25/12.  
Mount Sinai School of Medicine, Dept. of Structural and Chemical Biology, New York, NY, 5/10/12.  
University of Colorado Cancer Center, Molecular Oncology annual retreat: Chromatin, Epigenetics, and Cancer. Colorado State University, Fort Collins, CO, 6/11/12.
- 2013  
Stowers Institute for Medical Research, Kansas City, MO 3/27/13.  
University of Colorado-Denver, Dept. of Integrative Biology, Denver, CO, 9/27/13.
- 2014  
University of Texas–Southwestern Medical Center, Gene Regulation and Genomics Seminar series. Dallas, TX, 3/17/14.
- 2015  
2<sup>nd</sup> International PhD Symposium of the Molecular Mechanisms of Cell Signaling, “Signaling Hubs: Central Organizers of Biological Systems.” Vienna, Austria, June 11 – 12, 2015. (Keynote speaker)  
34<sup>th</sup> Summer Symposium in Molecular Biology, “Chromatin and Epigenetic Regulation of Transcription.” Penn State University, July 21 – 24, 2015.  
Colorado Immunology Conference, Vail, CO, Sept. 2 – 4, 2015.  
University of Colorado, Denver, Anschutz Medical School, Dept. of Pharmacology. November 2, 2015.
- 2016  
Brandeis University, Dept. of Biology, March 1, 2016.  
University of Indiana School of Medicine, Dept. of Biochemistry & Molecular Biology, May 9, 2016.  
California Polytechnic State University (Cal Poly), July 8, 2016.  
Van Andel Institute, 7<sup>th</sup> Annual Origins of Cancer Symposium, “Exploring Tumor Complexity” July 22, 2016; Grand Rapids, MI  
ASBMB Special Symposium “Transcriptional Regulation By Chromatin and RNA Polymerase II” Snowbird, UT Oct. 6 – Oct. 10, 2016.
- 2017  
Calvin College, Dept. of Chemistry and Biochemistry, September 21, 2017  
Hope College, Dept. of Biochemistry, September 22, 2017  
SFB 960 – Symposium “The Biology of RNA-protein Complexes” October 11 – 14, Regensburg, Germany.
- 2018  
ASBMB Special Symposium “Transcriptional Regulation By Chromatin and RNA Polymerase II” Snowbird, UT Oct. 4 – Oct. 8, 2018.  
SMICH (Signaling Mechanisms In Cellular Homeostasis) PhD program retreat, sponsored by Austrian Science Fund; Strass im Strassertale, Austria, Sept. 23 – 25, 2018.  
Research Institute of Molecular Pathology (IMP), Vienna, Austria; Sept. 25, 2018.
- 2019  
Northwestern University, Feinberg School of Medicine, January 8, 2019  
Cold Spring Harbor Laboratory “Chromatin, Epigenetics, and Gene Expression” summer course, Cold Spring Harbor, NY 7/29/19.  
Cold Spring Harbor Laboratory “Mechanisms of Eukaryotic Transcription” Meeting, Cold Spring Harbor, NY 8/27/19 – 8/31/19.



Symposium on “Regulation of transcription: from genetics and biochemistry to single molecule visualization” Asilomar Hotel & Conference Grounds, Pacific Grove, CA, September 20 – 22, 2019.

University of South Carolina, College of Pharmacy, Columbia, SC, December 3, 2019.

2020

Keystone Symposium on “Gene Regulation: from Mechanisms to Disease” Keystone, CO 1/26/20 – 1/30/20.

University of Texas-Austin, Dept. of Molecular Biosciences, Austin, TX, February 5, 2020

Erasmus University, Dept. of Biochemistry, Rotterdam, Netherlands, April 2, 2020 [Canceled]

Signaling Mechanisms in Cellular Homeostasis (SMICH) PhD Symposium, Vienna, Austria, April 14-15, 2020. [Canceled]

Dahlen Colloquium Series, Max Planck Institute for Molecular Genetics, Berlin, Germany, April 20, 2020 [Canceled]

2021

Simons Foundation Autism Research Initiative (SFARI) MED13L Scientific Meeting, May 26, 2021

Cold Spring Harbor Laboratory “Mechanisms of Eukaryotic Transcription” Meeting, Cold Spring Harbor, NY 8/31/21 – 9/4/21.

2022

EMBL Conference on Transcription and Chromatin in Heidelberg, Germany, Aug 27 - Aug 30, 2022.

SMICH (Signaling Mechanisms In Cellular Homeostasis) PhD program retreat, Strass im Strassertale, Austria, Sept. 25 – 27, 2022. [Canceled]

ASBMB Special Symposium “Transcriptional Regulation By Chromatin and RNA Polymerase II” in Snowbird, UT Sept 29 – Oct 3, 2022.

Yale University Dept of Molecular Biophysics and Biochemistry; October 17, 2022

St. Jude Children's Hospital, November 3, 2022

2023

Dahlen Colloquium Series, Max Planck Institute for Molecular Genetics, Berlin, Germany, May 22, 2023.

Elsevier & Journal of Molecular Biology Editorial Board Symposium, Sanford Consortium for Regenerative Medicine, San Diego, CA; June 14 - 15, 2023.

Cold Spring Harbor Laboratory “Chromatin, Epigenetics, and Gene Expression” course, Cold Spring Harbor, NY July 29, 2023.

SMICH (Signaling Mechanisms In Cellular Homeostasis) PhD program retreat (University of Vienna), Hotel Schachner, Maria Taferl, Austria, Sept. 11 – 13, 2023.

Purdue University, October 3, 2023

### **MEETING ABSTRACTS:**

I have been corresponding author or co-author on over 50 published meeting abstracts since becoming assistant professor at UC-Boulder in 2004. The author lists, abstract titles, and meeting information is extensive and is not listed here.

### **TEACHING—Graduate and undergraduate courses**

CHEM6711/PHYS7810/MCDB6400 Foundations of Quantitative Biology  
Fall 2012 (1 lecture)

Graduate course, 10 students. Gave lecture on image processing techniques associated with electron microscopy and single-particle reconstruction. Focused on docking high-resolution crystal structure data into cryo-EM maps for obtaining pseudo-atomic resolution structural information of large protein assemblies.

#### CHEM5801

Spring 2012, Spring 2014, Spring 2016, Spring 2018 (2 lectures of a team-taught course)

Graduate course, approximately 20 students per year. Taught 3 hours on gene expression and its regulation by cellular signaling cascades. Designed lectures and assigned homework; led class discussions of student assignments. Wrote and graded exam questions related to my section of the course.

#### CHEM5771 Advanced General Biochemistry I.

Fall 2004, Fall 2005, Fall 2010, Fall 2011.

Approximately 15 students per year. 5 credits, taught 45 hours. Organized class lectures, wrote exams, assigned papers for discussion and led discussions in class. Graded exams, homework, and student research proposals.

#### CHEM5781 Advanced General Biochemistry II.

Spring 2016, 2017, 2018

8 students 2016, 13 students 2017; 14 students 2018; 4 credits, taught 40 hours. Organized class lectures, wrote tests and exams, assigned papers for discussion and led discussions in class. Graded tests and exams and student research proposals.

#### CHEM5776 Scientific ethics course.

Fall 2004, Fall 2005, Fall 2010, Fall 2011.

Graduate course, 1 credit; approximately 20 students per year. Led in-class discussions of case studies.

#### CHEM5611 Methods in Molecular Biophysics.

Fall 2004, Fall 2006, Fall 2008, Fall 2010 (2 lectures of a team-taught course)

Graduate course, approximately 20 students per year. Taught 3 hours on electron microscopy and single-particle reconstruction techniques. Designed lectures and assigned homework; led class discussions of student assignments. Wrote and graded exam questions related to my section of the course.

#### CHEM4711/5711 Biochemistry I (CHEM 5711 for graduate students)

Fall 2006, Fall 2007, Fall 2008, Fall 2009, Fall 2013, Fall 2014

Undergraduate course, approximately 75 students per year. 3 credits, teaching 45 hours. Organized and delivered class lectures, and wrote problem sets and exams. Graded exams and problem sets.

#### BCHM4400/5400 Physical Chemistry for Biochemists (BCHM 5400 for graduate students)

Spring 2019

Undergraduate course, 37 students, 4 credits (class + recitation). Organized recitation sections and delivered class lectures and group activities; wrote/assigned homework, tests, exams, and group presentations. Graded exams, tests, etc.

#### BCHM2700 Foundations of Biochemistry

Spring 2021, 2022, 2023

Undergraduate course, 30-40 students, 4 credits (class + recitation). Organized and delivered class lectures and wrote quizzes, tests, and exams. Organized weekly recitation sessions for TA; selected online homework problems (Sapling) and created in-class presentation topics and guidelines for students, working in small groups. Created in-class group activities to test comprehension in real time. Graded tests and exams. Course was remote in 2021.

## **TEACHING—Present and past lab members**

### **Graduate Students – current**

**Allison Schier (18-present)**

**Olivia Luyties (19-present)**

**Taylor Jones (19-present)**

**Megan Palacio (20-present)**

**Kira Cozzolino (21-present)**

**Ariel Eraso (21-present)**

**Michael Nagel (21-present)**

**Jessica Rodino (22-present)**

### **Graduate Students – past**

Krista Meyer (04-09) Ph D. January 2009, now a senior scientist at Biodesix, Inc.

Thesis title: “*Mechanisms regulating the human Mediator complex*”

Sarah Venezia (04-05) Masters May 2005. Coursework masters.

Matthew Knuesel (05-09) Ph D. November 2009. Currently a postdoc with Dr. Keith Yamamoto, UCSF.

Thesis title: “*Characterizing the roles of the CDK8 Module in human Mediator structure and function*”

Carrie Bernecky (05-10) Ph D. July 2010. Currently Assistant Professor at the Institute of Science and Technology, Vienna, Austria.

Thesis title: “*Molecular architecture of the human Mediator–RNA polymerase II–TFIIIF assembly*”

Yuefeng Gao (07-10) Masters August 2010. Thesis title: “*Biochemical characterization of human Mediator complex*”

Christopher Ebmeier (06-11) Ph D. December 2011. Currently co-director of Mass Spectrometry Core Facility (UC-Boulder). Thesis title: “*Targeted proteomics and Molecular Mechanisms of Gene Activation*”

Vanessa Bowman (10-11) Masters May 2011. Coursework masters. Currently teaching high school science in New York state.

Kristin Hamman (11-12) Masters May 2012. Coursework masters. Currently a Project Manager at Merck, Boston, MA.

Zachary Poss (10-15) Ph D. July 2015. Currently a Staff Scientist at Strategic Analysis, Inc. and consultant for the Biological Technologies Office at DARPA. Thesis title: “*Characterization of a novel inhibitor and substrates of Mediator kinases CDK8 and CDK19*”

Audrey Audetat (14-16) Ph D. November 2016. Currently scientist at Biodesix, Inc.

Thesis title: “*Regulation of gene expression by the Mediator kinase CDK19*” Note: Audrey joined my lab from MCDB after she decided to leave her previous lab (Dr. J. Espinosa).

Benjamin Allen (12-17) Ph D. July 2017. Thesis title: “*Disruption of p53 activated transcription by a rationally designed peptide*”

Thomas Harper (17-18) Masters December 2019. Coursework masters.

Charli Fant (14-19) PhD July 2019. Thesis title: *"Design and implementation of a fully reconstituted assay to investigate mechanisms of early human pol II transcription"*  
Cecilia Levandowski (15-20) PhD March 2020. Thesis title: *"An investigation of how the naturally occurring isoform  $\Delta 40p53$  alters  $WTp53$  activity"*  
Jonathan Rubin (15-20) PhD May 2020. Thesis title: *"Mechanisms of gene regulation: exploring the activity of transcription factors and Mediator kinases"*  
Jenna Rimel (17-21) PhD January 2022. Thesis title: *"Diverse roles for the TFIID complex in transcription and mRNA processing"*

### **Post-doctoral Scholars – current**

#### **William Richter (21-present)**

#### Post-Doctoral Students – past

Derek Taylor (08-09; co-mentor with Dr. Tom Cech). Derek is now an Assistant Professor (tenure track) at Case Western Reserve University.

Heeyoun Bunch (10-11) Heeyoun is now an Assistant Professor (tenure-track) at Kyungpook National University in South Korea.

Christopher Ebmeier (12-13) Dr. Ebmeier is currently a senior scientist working the in the lab of my colleague in MCDB, Dr. William Old.

Shih-Chieh Lin (08-14) Dr. Lin is currently working in biotech in the SF bay area.

Timothy Read (16-17) Dr. Read joined my lab in the summer of 2016 and was awarded his own NIH postdoctoral fellowship (F32 GM122361) to pursue studies related to p53 and transcription regulation. Because of family issues, he had to relocate to Boston; he is now a postdoc in the lab of Martha Bulyk at Harvard University.

Tim-Michael Decker (18-20). Tim is now working as a biochemist at a company called The Cultivated B in Heidelberg, Germany. The company specializes in the sustainable production of animal proteins for commercial purposes.

Haitham Sobhy (21-22).

#### Research Assistants – past

Ellen Roper (05-06)

Hong Wang (09-10)

Carly Loner (10-11)

Jesse Goossens (10-11)

Vishnu Raman (13-14)

Radhika Rawat (15-16)

Meagan Esbin (Paul) (16-17)

Robert Meushaw (20-21)

### **Research Assistants – current**

#### **Grace Shelby (22-present)**

### **Undergraduate Students – current**

**Kayla Molison (2020 – present)**

**Mirzam Saucedo (2021 - present)**

**Emeen Alqabani (2022 - present)**

#### Undergraduate Students – past

Autumn York (06-08) graduated with honors in 2008, obtained PhD from UCLA in 2015.

Undergraduate Thesis title: “*Structural and functional examination of Sp1/SREBP-Mediator transcriptional synergy*”

Luke Garcia (05-06) HHMI minority scholar; now graduate student at Harvard.

Luis Morales (05) SMART summer program.

Anthony Velasquez (06) SMART summer program, now medical student at Dartmouth.

Mark Bessette (06-07) technician. Now Associate Scientist II at Thermo Fisher Scientific.

Lauren Matelski (07) summer student. Now lab technician with Dr. Eric Davidson at Caltech.

Jesse Goossens (07-09) graduated with honors in 2009, currently Ph D student at Loyola University (Chicago). Thesis title: “*A novel role of Cohesin in eukaryotic transcription*”

Carly Loner (08-10) graduated with honors in 2010, currently MD/Ph D. student at University of Wisconsin, Madison. Thesis title: “*Characterizing the interaction of human Mediator subunit MED1 with thyroid hormone receptor TR $\alpha$* ”

Nicholas Parsonnet (09-11) graduated with honors in 2011, now Ph D. student at University of Colorado, Boulder. Thesis title: “*Cofactors of the p65-Mediator Complex*”

Oluwafunmilayo Ogunremi (10-11) graduated with honors in 2011, now in MD program at UC-Denver (Anschutz Medical Campus). Thesis title: “*Subunit Composition of the human Mediator Complex in Neuronal cell lines*”

Faria Ahmed (09-11) graduated *summa cum laude* in 2011, plans to attend medical school. Currently working as lab technician with Dr. David Hawkins (University of Washington). Thesis title: “*Examination of Mediator composition and p53 in distinct breast cancer lines: MCF7 and MDA-MB-231*”

Richard Alexander (10-11) graduated *summa cum laude* in 2011, currently in MD program at UCSF. Thesis title: “*Mechanisms of eukaryotic transcriptional regulation: the human Mediator complex and Saccharomyces Cerevisiae Set3 histone deacetylase complex*”

Vishnu Raman (11-13). Graduated Spring 2013; currently technician in Taatjes lab and is pursuing PhD (UMass) in chemical engineering.

Taylor Simmons (12-14). Graduated *magna cum laude* in 2014, currently in graduate school at Columbia working toward a Masters degree in public health.

Eliza Foster (14-15). Graduated *magna cum laude* in 2015. Thesis title: “*A distinct subunit composition of chromatin-bound Mediator*” Eliza is currently teaching high school math & science as part of the UCCSTeach program (UC-Colorado Springs).

Meagan Paul (15-16). Graduated *summa cum laude* in 2016. Thesis title: “*Examining the role of RNA secondary structure on human RNA polymerase II pausing*” Currently pursuing PhD in biophysics at UC-Berkeley.

Elaine Shults (15-16). Graduated *magna cum laude* in 2016. Thesis title: “*Improving the efficiency of CRISPR-Cas9: expression and purification of Cas9*” Masters program in Biotechnology at Georgetown University; Global Regulatory Policy Intelligence Lead at Genentech.

Zachary Maas (17-19). Graduated *summa cum laude* in 2019. Thesis title: “*Method optimization in the analysis of nascent sequencing data*” Currently a PhD student in the IQBiology program at UC-Boulder.

Robert Meushaw (17-20). Graduated *summa cum laude* in 2020. Thesis title: “*Engineering of a cleavable C-terminal domain of RNA polymerase II*” Currently a research technician in the Taatjes lab at UC-Boulder.

John Moir (17-20). Graduated *summa cum laude* in 2020. Thesis title: “*Mechanistic studies of the general transcription factors TFIID and TFIIF*” Currently in medical school.

Alexander Woyciehowsky (20-22) Graduated summa cum laude in 2022. Thesis title: "*Elucidation of p52 mutant effects on TFIIH structural integrity and function*" Currently applying to dental schools.

## UNIVERSITY AND PUBLIC SERVICE

### Department

Taught Biochemistry course (CHEM5711) as a volunteer for 3 weeks in 2/04.

Graduate student recruiting trip to Calvin College (Grand Rapids, MI) and Hope College (Holland, MI) Oct. 2005.

Graduate student recruiting trip to California State Polytechnic University (Cal Poly, San Luis Obispo, CA) July, 2016.

Graduate student recruiting trip to Calvin College (Grand Rapids, MI) and Hope College (Holland, MI) September 2017.

Undergraduate honors thesis mentor: Autumn York (2008), now postdoc at Yale (R. Flavell lab); Jesse Goossens (2009), currently in Ph D. program at Loyola University (Chicago); Carly Loner (2010), now MD/Ph D. student at University of Wisconsin-Madison; Nicholas Parsonnet (2011), now Ph D. student at University of Colorado-Boulder (Wuttke lab); Funmi Ogunremi (2011), currently MD student at CU-Denver, Faria Ahmed (2011), now technician in lab of Dr. David Hawkins, University of Washington; Richard Alexander (2011), currently in MD/Ph D program at UCSF; Vishnu Raman (2013), currently PhD student at the University of Massachusetts (Chemical Engineering); Taylor Simmons (2014), currently ORISE Fellow at US Dept of Health & Human Services (Infectious Disease Policy); Eliza Foster (2015), currently teaching high school math & science as part of the UCCSTeach program (UC-Colorado Springs); Meagan Paul (now Meagan Esbin) (2016), currently in PhD program in Biophysics at UC-Berkeley; Elaine Shults (2016), currently Regulatory Intelligence Analyst at Genentech, Inc; Zachary Maas (2019), currently PhD student in the IQBiology program at UC-Boulder; John Moir (2020), currently in medical school; Robert Meushaw (2020), currently a research technician in Taatjes lab.

Ph D. Thesis Mentor: Krista Meyer (2009), now CSO at Biodesix (Boulder, CO)  
Matthew Knuesel (2009), now senior scientist at the HudsonAlpha Institute for Biotechnology in Huntsville, Alabama.  
Carrie Bernecky (2010), now Assistant Professor (tenure track) at the Institute of Science and Technology in Vienna, Austria.  
Christopher Ebmeier (2011), currently senior postdoc in the Old laboratory (UC-Boulder MCDB Dept.)  
Zachary Poss (2015), currently postdoctoral researcher in lab of Dr. William Old (UC-Boulder MCDB Dept.)  
Audrey Audetat (2016), currently working as a scientist at Biodesix (Boulder, CO).  
Benjamin Allen (2017), plans to work as postdoc or in industry in Greensboro, NC area.  
Charli Fant (2019), currently working for biotech company Zoetis, Inc., based in Fort Collins, CO.  
Cecilia Levandowski (2020), returning to medical school to complete her MD degree (Dr. Levandowski is an MD/PhD student).

Jonathan Rubin (2020), currently working at ArcherDX, Inc. (Boulder, CO).

Ph D. Thesis Committee: Celso Espinosa, Stacey Wagner, Ben Barthel, John Hardin, Kristen Bjorkman, J'aime Manion, Jessica Hattle, Dana Ungermannova, Rebecca Montange, Kyle Landgraf, Pablo Ceres, Jen Gifford, Francis Reyes, Dan Rudnicki, Miguel Gonzalez, Ryan Walters, Joel Baskin, Gilson Sanchez, Jake Polaski, Alex Hopkins, Sarah Dickerson, Tyler Matheny, Abigail Horn, Garrett Edwards, David Smith, Justin Moser, Roman Iwasaki, Garrett Edwards, Devin Tauber, Rob Abrisch, Thao Huynh, Price Kirby, Stephen Archuleta, Giulia Corbet, Leah Damon, Desmond Hamilton, Jon Markert, Mando Ramirez

Comprehensive Exam: Rebecca Blair, Michelle Turco, Travis Lund, Andrew Garst, Jessica Rouge, Cristina Sandoval, J'aime Manion, Jessica Hattle, Tianjing Hu, Mikal Sherman, Philip Calabrese, Eli Porter, Jeff Swan, Joanna Duncan, others.

Undergraduate honors thesis committee member: Craig Manahan (Biochemistry), Richard Paucek (Biochemistry).

M.S. Thesis Committee: Kellen Sakrison

Organizer of Biochemistry Dept. retreat, held each year in Winter Park, CO. A 2-day event that features talks and posters from graduate students and postdocs in the department (2008 – 2012).

Coordinator of Biochemistry departmental seminar series, held each Wednesday during the fall and spring semester (2005 – 2008).

Faculty Search Committee for synthesis/organic/bio-organic chemist, Fall 2007 – Spring 2008. (Hired Xiang Wang)

Faculty Search Committee for Biochemistry: Fall 2013 – Spring 2014; Fall 2016 - Spring 2017; Chair of search committee for junior faculty hire in 2018 (P. Hosseinzadeh); Fall 2019 - Spring 2020 for targeted cryoEM search (K. Luger Chair), hired V. Kasinath and H. Aydin.

Faculty search committee chair 2022/2023; others on search committee: Halil Aydin, Tom Cech, Karolin Luger, Deb Wuttke.

Graduate student admissions committee: review ca. 150 applications per year, select candidates for invitation and admission into Biochemistry graduate program; organize recruitment weekends in March each year (2011 – 2018).

Promotion and Tenure Committee (2013 – present)

Executive Committee 2015 – 2017; 2021 – present

Writing/grading written exams for first-year graduate students 2020 – present

Member of Biophysics Steering Committee 2022 – present.

**University of Colorado**

Adjunct Ph D. thesis advisor: David Smith (advisor: Dr. Christopher Lowry, IPHY)

Undergraduate honors thesis committee member: Claire Egan (MCDB), Jordan Lewandowski (MCDB), Daniel Yuan (MCDB), Lauren Bauer (MCDB), Kirsten Miller (MCDB), Elizabeth Doggett (MCDB), Ellen Goodall (MCDB), Alexander Bally (MCDB), Michael Cookson (MCDB), Alexis Johnson (MCDB), Tara Peters (MCDB).

Ph D. Thesis Committee: Stephanie Williams (UC-Denver), Candice Wike (UC-Denver), Tom Armel (MCDB), Megan Philbin (UC-Denver), Nathan Gomes (MCDB), Myriah Chavez (UC-Denver), Becky Fusby (UC-Denver), Joanna Duncan/Brown (MCDB), Audrey Audetat (MCDB), Hanzeng Li (MCDB), Roni Dengler (MCDB), Jessica Westfall (MCDB), Samuel Hunter (MCDB)

Ph D. Comprehensive Exam: Seth Noone (UC-Denver), Candice Wike (UC-Denver), Becky Fusby (UC-Denver), Hanzeng Li (MCDB).

Recommendation letters for students pursuing graduate degrees: I have written dozens and dozens of reference letters for undergraduate students whom I have taught in the classroom or supervised in my laboratory. Part of this process includes advising each of these students with respect to their career goals and field of study. These letters were included as part of the application materials for admission into a graduate program (Ph D, MD, etc.).

Was part of a group of PIs (Biochemistry and MCDB faculty) that submitted an application for the **Beckman Scholars Program**, which funds undergraduate research at UC-Boulder. This application was funded for 2017, with 3 years of support for ~6 undergraduates. Re-application to the Scholars program occurred in 2020, and the award was renewed for another 3 years.

Advisory Board for the Cell Technologies Shared Resource (UC-Denver School of Medicine; 2016 - present)

### **Scientific Community**

Editorial Board: *Molecular and Cellular Biology* (2015+)  
*Journal of Molecular Biology* (2016+)

Editor of Special Issue for the *Journal of Molecular Biology*, devoted to RNA polymerase II transcription (2020-2021).

Scientific Advisory Board for Signaling Mechanisms in Cellular Homeostasis PhD program at the University of Vienna (2018+).

Member, Molecular Genetics A (MGA) NIH study section (2019 - 2021)

Member, Maximizing Investigators' Research Award A (MRAA) NIH study section (2021 - 2025)

Reviewer: NSF reviewer, MCB-Biomolecular Systems 2013, Genetic Mechanisms 2016, 2019, 2021.  
American Cancer Society, DNA Mechanisms in Cancer (DMC) review panel (09-13)  
NIH ad-hoc reviewer, MGA study section: 2013, 2015, 2016, 2017.  
ad-hoc reviewer: Medical Research Council (MRC, UK) 2010; Genesis Oncology Trust (New Zealand) 2011; European Research Council 2016



NIH ad-hoc reviewer NIH Challenge grants; Competing Revisions for  
Macromolecular Interactions in Cells; Macromolecular interactions in cells;  
Functional Epigenomics; S10 Shared Instrumentation Grants, others.

Instructor, Eukaryotic Gene Expression course (2010 – 2016). This is a 3-week laboratory course that trains 16 graduate students and post-docs selected from around the world about techniques used to study gene expression and regulation in eukaryotic organisms. Course is held at Cold Spring Harbor Laboratories, Cold Spring Harbor, NY.

Co-organizer of ASBMB Special Symposium on "Transcriptional regulation by chromatin and RNA polymerase II." This meeting is held every other year and this is an 8-year commitment (2017+).

Scientific Advisory Board, Dewpoint Therapeutics (2020 - present)

Textbook reviewer, "Principles of Biochemistry" 4<sup>th</sup> Edition. Undergraduate textbook, Horton et al. Pearson/Prentice Hall Publishers, Upper Saddle River, NJ.

Manuscript Reviewer: *Science, Nature, Mol Cell, J Mol Biol., Mol Cell Biol., Cell Reports, Genes & Development, Oncogene, Nucleic Acids Research, PLoS Biology, Nature SMB, Cell, PNAS, etc.*

### **Local Community**

Instructor for the CU Wizards program (2010 – 2017). This includes putting on a free, 1-hour show designed to inform and entertain children about the wonders of science. It is free and open to the public, geared towards 5-9 year-olds.

Outreach to local high school students. My lab began a partnership in 2010 (and still ongoing) with Boulder or Fairview high school. As part of an honors science curriculum, students from Boulder High work on a project in my laboratory for 4 months. The results from this work are then described in a short thesis and are presented as part of a local science fair. Since 2013, 10 high school students from around the state of Colorado have worked in the Taatjes lab. In each case, the student was put on a project with a graduate student and was required to keep a lab notebook and write a report on their summer project results.

## **GRANT SUPPORT**

### **Ongoing Research Support:**

#### **Active Research Support:**

**R35 GM139550**  
**NIGMS**

**Taatjes (PI)**

1/1/21 – 12/31/25

Mechanisms of RNA polymerase II transcription regulation

**R01 AI156739**  
**NIAID**

**Taatjes (PI)**

9/22/20 – 8/31/25

Mediator kinases as interferon antagonists in Down syndrome

**MCB 1818147 (MPI) Taatjes (PI); Shimon Weiss (PI)**  
**NSF**

8/1/18 – 7/31/23

Dynamic regulation of initiation and pausing of transcription by human RNA polymerase II

**Dewpoint Therapeutics Taatjes (PI)**  
**Collaborative service agreement**

6/1/20 – 10/31/23

Mediator kinase function in molecular condensates

**Completed (within past 3 years):**

Syros Pharmaceuticals Taatjes (PI)  
Collaborative service agreement

6/1/19 – 5/28/22

Evaluation of CDK7 inhibitors

R01 GM110064 (MPI) Taatjes (PI); Jeff Ranish (PI)  
NIGMS

9/22/16 – 5/31/21 (NCE)

TFIIH and transcription regulation

R01 GM117370 Taatjes (PI)  
NIGMS

6/28/16 – 11/30/20

Mediator kinases and transcription regulation

R03 AG061466 (MPI) Taatjes (PI); Dowell (PI)  
NIA

2/1/19 – 12/31/21 (NCE)

How does the naturally-occurring delta-Np53 isoform influence aging?