

## ALLEGATO A

UNIVERSITÀ DEGLI STUDI DI MILANO

Procedura di selezione per la chiamata a professore di II fascia da ricoprire ai sensi dell'art. 18, commi 1 e 4, della Legge n. 240/2010 per il settore concorsuale \_\_\_\_03/C1\_\_\_\_\_,  
(settore scientifico-disciplinare \_\_\_\_CHIM/06 - Chimica Organica\_\_\_\_\_)  
presso il Dipartimento di \_\_\_\_\_SCIENZE FARMACEUTICHE\_\_\_\_\_, Codice concorso \_\_4585\_\_

## [Nome e cognome] CURRICULUM VITAE

(N.B. IL CURRICULUM NON DEVE ECCEDERE LE 30 PAGINE E DEVE CONTENERE TUTTI GLI ELEMENTI UTILI ALLA VALUTAZIONE DEI TITOLI SOTTOPOSTI AL GIUDIZIO DELLA COMMISSIONE)

### INFORMAZIONI PERSONALI (NON INSERIRE INDIRIZZO PRIVATO E TELEFONO FISSO O CELLULARE)

COGNOME	FORCONI
NOME	MARCELLO
DATA DI NASCITA	27 OTTOBRE 1972

### TITOLI

#### TITOLO DI STUDIO

(indicare la Laurea conseguita inserendo titolo, Ateneo, data di conseguimento, ecc.)

Laurea in Chimica Industriale, Università di Bologna, Febbraio 1997

#### TITOLO DI DOTTORE DI RICERCA O EQUIVALENTI, OVVERO, PER I SETTORI INTERESSATI, DEL DIPLOMA DI SPECIALIZZAZIONE MEDICA O EQUIVALENTE, CONSEGUITO IN ITALIA O ALL'ESTERO

(inserire titolo, ente, data di conseguimento, ecc.)

Ph.D. in Chemistry, University of Sheffield, Sheffield U.K. April 2003

#### ALTRI TITOLI CONSEGUITI

(inserire titolo, ente, data di conseguimento, ecc.)

Postdoctoral Researcher, Stanford University, Stanford CA, U.S.A. 2003-2010

### ATTIVITÀ DIDATTICA

#### INSEGNAMENTI E MODULI

(inserire anno accademico, corso laurea, numero di ore frontali, eventuale CFU)

Biochemistry, part I, CHEM 351, 3 credit hours  
Biochemistry, part II, CHEM 352, 3 credit hours

Biochemistry Lab (CHEM 354L), 1 credit hour  
Chemical Biology (CHEM 353), 3 credit hours  
Principles of Chemistry, part I (CHEM 111), 3 credit hours  
Principles of Chemistry, part II (CHEM 112), 3 credit hours  
Principles of Chemistry Lab, part I (CHEM 111L), 1 credit hour  
Principles of Chemistry lab, part II (CHEM 112L), 1 credit hour  
Research Experience (CHEM 193), 1 credit hour  
Chemistry and Biochemistry Seminars (CHEM 481), 1 credit hour  
Individual enrollment research (CHEM 397/481/482), 0-2 credit hours  
Bachelor's Essay (CHEM 490), 6 credit hours

## **ATTIVITÀ DI DIDATTICA INTEGRATIVA E DI SERVIZIO AGLI STUDENTI**

### **ATTIVITÀ DI RELATORE DI ELABORATI DI LAUREA, DI TESI DI LAUREA MAGISTRALE, DI TESI DI DOTTORATO E DI TESI DI SPECIALIZZAZIONE**

*(inserire anno accademico, ateneo, corso laurea, ecc.)*

Thesis ("Laurea Magistrale"), Dario Telese, Università di Bologna, Bologna, Italy, 2017-2018; co-mentor with Dr. Carla Boga

Mantor, Honor's Thesis: Chloe Teichman (Academic Magnet High School, 2013) and Steven Liu (Academic Magnet High School, 2014).

### **ATTIVITÀ DI TUTORATO DEGLI STUDENTI DI CORSI DI LAUREA E DI LAUREA MAGISTRALE E DI TUTORATO DI DOTTORANDI DI RICERCA**

*(inserire anno accademico, corso laurea, ecc.)*

Ph.D. Advisory Committee, Member, Fabio Casu, Medical University of South Carolina, May 2011-February 2013

### **SEMINARI**

*(inserire titolo del seminario, luogo, data, ecc.)*

## **ATTIVITÀ DI RICERCA SCIENTIFICA**

### **PUBBLICAZIONI SCIENTIFICHE**

*(per ciascuna pubblicazione indicare: nomi degli autori, titolo completo, casa editrice, data e luogo di pubblicazione, codice ISBN, ISSN, DOI o altro equivalente)*

As Associate Professor

1. Caselle, E.A.; Yoon, J.H.; Bhattacharya, S.; Rempillo, J.J.L.; Lengyel, Z.; D'Souza, A.; Moroz, Y.S.; Tolbert, P.L.; Volkov, A.N.; Forconi, M.; Castaneda, C.A.; Makhlynets, O.V.; Korendovych, I.V. "Kemp Eliminases of the AlleyCat Family Possess High Substrate Promiscuity" *ChemCatChem* (2019) 11 1425.
2. Waddell, G.\*; Gilmer, C.\*; Taylor, N.\*; Reveral, J.\*; **Forconi, M.**; Fox, J. "The Eukaryotic Enzyme Bds1 Is an Alkyl but Not an Aryl Sulfohydrolase" *Biophys. Biochem. Res. Comm.*, (2017) 491, 382-387.
3. Lamba, V.; Sanchez, E.\*; Fanning, L.\*; Howe, K.\*; Gonzalez, M. A.\*; Herschlag, D.; **Forconi, M.** "Kemp Eliminate Activity of Ketosteroid Isomerase" *Biochemistry* (2017), 56, 582-591.

As Assistant Professor

4. Sanchez, E.\*; Lu, S.\*; Reed, C.\*; Schmidt, J.\*; **Forconi, M.** "Kemp Elimination in Cationic Micelles: Designed Enzyme-Like Rates Achieved through the Addition of Long-Chain Bases" *J. Phys. Org. Chem.* (2016), 29, 185-189.
5. **Forconi, M.** "Medium effects in biologically related catalysis" *Adv. Phys. Org. Chem.* (2015) 49, 57-101.
6. Schmidt, J.\*; Ehasz, C.\*; Epperson, M.\*; Klas, K.\*; Wyatt, J.; Hennig, M.; **Forconi, M.** "The effect of the hydrophobic environment on the retro-aldol reaction: comparison to a computationally-designed enzyme" *Org. Biomol. Chem.* (2013) 11, 8419-8425. PMID: 24189834.
7. **Forconi, M.**; Benz-Moy, T.L.; Rule-Gleitsman, K.; Ruben, E.A.; Metz, C.; Herschlag, D. "Exploring Purine N7 Interactions via Atomic Mutagenesis: The Group I Ribozyme as a Case Study" *RNA* (2012) 18, 1222-1229. PMID: 22543863.
8. **Forconi, M.**; Schwans, J.P.; Sengupta, R.N.; Piccirilli, J.A.; Herschlag, D. "2'-Fluoro substituents can mimic native 2'-hydroxyls within structured RNA" *Chem. Biol.* (2011) 18, 949-954. PMID: 21867910.

From post-doctoral, graduate, and undergraduate experiences.

9. **Forconi, M.**; Porecha, R.H.; Piccirilli, J.A.; Herschlag, D. "Tightening of active site interactions en route to the transition state revealed by single-atom substitution in the guanosine-binding site of the *Tetrahymena* group I ribozyme" *J. Am. Chem. Soc.* (2011) 133, 7791.
10. **Forconi, M.**; Sengupta, R.N.; Piccirilli, J.A.; Herschlag, D. "A rearrangement of the guanosine-binding site establishes an extended network of interactions in the *Tetrahymena* group I active site" *Biochemistry* (2010) 49, 2753.
11. **Forconi, M.**; Sengupta, R.N.; Liu, M.-C.; Sartorelli, A.C.; Piccirilli, J.A.; Herschlag, D. "Structure and function converge to identify a hydrogen bond in the group I ribozyme active site" *Angew. Chem. Intl. Ed.* (2009) 48, 7171.

❖ This paper was selected as 'Hot Paper' by the Editors for "its importance in an evolving field of high current interest", and was highlighted in *Nat. Chem. Biol.* (2009) 5, 712.

12. **Forconi, M.**; Herschlag, D. "Metal ion-based RNA cleavage as a structural probe" *Method Enzymol.* (2009) 268, 91.
13. **Forconi, M.**; Herschlag, D. "Use of phosphorothioates to identify sites of metal ion binding in RNA" *Method Enzymol.* (2009) 268, 311.
14. **Forconi, M.**; Hougland, J.L.; Lee, J.; Piccirilli, J.A.; Herschlag, D. "Functional identification of ligands for a catalytic metal ion in group I introns" *Biochemistry* (2008) 47, 6883.
15. **Forconi, M.**; Piccirilli, J.A.; Herschlag, D. "Modulation of group I intron catalysis by a peripheral metal ion", *RNA* (2007) 13, 1656.
16. Hougland, J.L.; Piccirilli, J.A.; **Forconi, M.**; Lee, J.; Herschlag, D. "How the group I intron works: a case study of RNA structure and function" in *The RNA World*, 3<sup>rd</sup> edition, Gestland, R.F., Cech, T.R., Atkins, J.F. editors (2006) Cold Spring Harbor Laboratory Press, New York.
17. **Forconi, M.**; Herschlag, D. "Promiscuous catalysis by the *Tetrahymena* group I ribozyme" *J. Am. Chem. Soc.* (2005) 127, 6160.  
 ❖ *This communication was classified as "of special interest" by Khersonsky, Roodveldt, and Tawfik [Curr. Opin. Chem. Biol. (2006) 498], and was highlighted by Faculty of 1000 Biology (<http://f1000biology.com/article/id/1025636>).*
18. Humphry, T.; **Forconi, M.**; Williams, N.H.; Hengge, A.C. "Altered mechanism of reaction of phosphate esters bridging a dinuclear metal center" *J. Am. Chem. Soc.* (2004) 126, 11864.
19. Humphry, T.; **Forconi, M.**; Hengge, A.C.; Williams, N.H. "An altered mechanism of hydrolysis for a metal-complexed phosphate diester" *J. Am. Chem. Soc.* (2002) 124, 14860.
20. **Forconi, M.**; Williams, N.H. "Mimicking metallophosphatases: revealing a role for an OH group with no libido" *Angew. Chem. Intl. Ed.* (2002) 41, 849.
21. Forlani, L.; Boga, C.; Mezzina, B.; **Forconi, M.\*** "Tautomerism and dimerization of acetamidothiazole derivatives - UV/Vis and NMR spectroscopic investigation" *Eur. J. Org. Chem.* (2001) 2779.
22. Forlani, L.; Boga, C.; **Forconi, M.\*** "Kinetics and mechanism of reactions between 2,4,6-trinitrofluorobenzene and alcohols" *J. Chem. Soc., Perkin Trans. 2* (1999) 1455.

**ORGANIZZAZIONE, DIREZIONE E COORDINAMENTO DI CENTRI O GRUPPI DI RICERCA NAZIONALI E INTERNAZIONALI O PARTECIPAZIONE AGLI STESSI**  
 (per ciascuna voce inserire anno, ruolo, gruppo di ricerca, ecc.)

**ATTIVITÀ QUALI LA DIREZIONE O LA PARTECIPAZIONE A COMITATI EDITORIALI DI RIVISTE SCIENTIFICHE**  
 (per ciascuna voce inserire anno, ruolo, rivista scientifica, ecc.)

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#### **TITOLARITÀ DI BREVETTI**

*(per ciascun brevetto, inserire autori, titolo, tipologia, numero brevetto, ecc.)*

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#### **PREMI E RICONOSCIMENTI NAZIONALI E INTERNAZIONALI PER ATTIVITÀ DI RICERCA**

*(inserire premio, data, ente organizzatore, ecc.)*

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- **External Grant Proposals, funded**

1. April 2014 NSF-MRI CHE-1429308 (as Co-PI) "MRI: Acquisition of a 400 MHz Nuclear Magnetic Resonance Spectrometer with a Multinuclear Probe and a Sample Changer". Collaborative grant with Justin Wyatt (PI), Tim Barker (Co-PI), Brooke Van Horn (Co-PI), and Wendy Cory (Co-PI), \$ 328,900.
2. July 2014-June 2016 "Nucleophilic aromatic substitution: An old reaction for new functionalization strategies" Single Investigator Cottrell College Science Award, Research Corporation, \$ 45,000 (which includes \$ 10,000 matching funds from the College of Charleston).
3. August 2012 (as a co-PI) NSF-MRI CHE -1229559 "MRI: Acquisition of an Ultra High Pressure Liquid Chromatograph - Mass Spectrometer for Interdisciplinary Undergraduate Research and Teaching in Chemistry and Related Fields" Collaborative Grant, NSF, with Wendy Cory (main PI), Jenn Fox (co-PI), Brooke Van Horn (Co-PI), and Vijay Vulava (Co-PI), \$ 277,191.
4. August 2011 (as a collaborator) "MRI: Acquisition of a Quadruple Resonance (QCI)-Cryoprobe for NMR Research and Training at MUSC", NSF, PI: Mirko Hennig (MUSC).

- **Internal Grant Proposals, funded**

1. Summer 2021. "Role of the porphyrin ring in the redox-catalyzed Kemp elimination", SURF Grant, URCA, College of Charleston, with Emma Van Horne (student), \$ 6,414
2. Summer 2021. "Direct Measurement of the Properties of Cell Membrane Mimics", SURF Grant, URCA, College of Charleston, with Gabrielle Molloseau (student) and Mike Giuliano (co-PI), \$ 6,500.
3. Summer 2021. "Mechanism of nucleophilic aromatic substitution with thiolates via NMR", SSM Grant, with Kimberly Sok (student), \$ 6,500.

4. Summer 2021. "Bioinformatics analysis of that SdsA1 family, INBRE, with Dana Mae Salvador (student) and Jenn Fox (co-PI), \$ 6,500.
5. Summer 2021. "Kinetics of nucleophilic aromatic substitution between 3,4,5-trifluorobenzonitrile and long chain thiols", SSM Grant, with Emma Wilds (student), \$ 6,500 (declined).
6. Summer 2018. "Isotope effects in the Kemp elimination", SURF Grant, URCA, College of Charleston, with Briana Taormina (student), \$ 7,000.
7. Summer 2018. "Reactivity of homologous sulfohydrolases" SURF Grant, URCA, College of Charleston, with Abigail Reeves (student) and Jenn Fox (co-PI), \$ 7,500.
8. Summer 2018. "Modification of thiols via nucleophilic aromatic substitution", Research Grant, Dean's Fund, School and Sciences and Mathematics, College of Charleston, with Jaclyn Dunne (student) \$ 2,500.
9. Summer 2017. "Comparison of Bds1 and SdsA1 reactivities", Research Grant, HHMI/INBRE, College of Charleston, with Caroline Gilmer and John Reveral (students), \$ 5,000.
10. Summer 2017 "Synthesis and modification of short peptides" SURF grant, URCA, College of Charleston, with Jonathan Derryberry (student), \$ 5,000.
11. February 2017. "Synthesis of deuterated benzisoxazoles to determine the rate-limiting step in enzyme-catalyzed Kemp elimination" Research and Development Grant, College of Charleston, \$ 1,450.
12. Summer 2016 "Investigation of Bds1 reactivity" SURF grant, URCA, College of Charleston, with Caroline Gilmer (student), \$ 6,500.
13. Summer 2016. "Kemp eliminase activity of ketosteroid isomerase" Research Grant, HHMI, College of Charleston, with Enis Sanchez and Lauren Fanning (students), \$ 10,000.
14. Summer 2015 "Kemp eliminase activity of ketosteroid isomerase" Research Grant, HHMI, College of Charleston, with Maria Alejandra Alvarez Gonzalez (high school student), \$ 1,500
15. September 2015, RPG Travel Grant to SERMACS-SWRM (Memphis, TN Nov 4-7, 2015) as co-PI with Jennifer Fox (PI) and Grace Waddell (student), URCA, College of Charleston, \$ 500
16. September 2015, RPG Travel Grant to SERMACS-SWRM (Memphis, TN Nov 4-7, 2015) with Noah Denman (student), URCA, College of Charleston, \$ 500
17. September 2015, RPG Travel Grant to SERMACS-SWRM (Memphis, TN Nov 4-7, 2015) with Lauren Fanning (student), URCA, College of Charleston, \$ 250
18. September 2015, RPG Travel Grant to SERMACS-SWRM (Memphis, TN Nov 4-7, 2015) with Enis Sanchez (student), URCA, College of Charleston, \$ 250

19. September 2015, RPG Travel Grant to SERMACS-SWRM (Memphis, TN Nov 4-7, 2015) with Jonathan Derryberry (student), URCA, College of Charleston, \$ 100
20. Summer 2015 "Kemp eliminase activity of ketosteroid isomerase" Research Grant, HHMI, College of Charleston, with Enis Sanchez (student), \$ 4,000
21. Summer 2015 "Kemp eliminase activity of ketosteroid isomerase" Research Grant, HHMI, College of Charleston, with Kate Howe (high school student), \$ 1,500
22. Summer 2015 "Sulfatase activity of SdsA1" SURF Grant, URCA, College of Charleston, with Noah Denman (student), \$ 6,500.
23. October 2014 RPG Travel Grant with Enis Sanchez (student) to SERMACS 2014 (Nashville, TN, Oct 16-19, 2014), URCA, College of Charleston, \$ 250.
24. October 2014 RPG Grant to SERMACS 2014 (Nashville, TN, Oct 16-19, 2014), with Brenna Norton-Baker (student), URCA, College of Charleston, \$ 250.
25. October 2014 RPG Grant to SERMACS 2014 (Nashville, TN, Oct 16-19, 2014), as co-PI with Jenn Fox (PI) and Grace Waddell (student), URCA, College of Charleston, \$ 250.
26. Summer 2014 "Chemical modification of a computationally-designed enzyme ", Research Grant, HHMI, College of Charleston, with Kate Diederich (student), \$ 4,000
27. Summer 2014 "Effects of hydrophobic interactions with the substrate in Kemp Elimination promoted by micelles", Research Grant, HHMI, College of Charleston, with Steven Lu (high school student), \$ 1,500.
28. September 2013, RPG travel grant to SERMACS 2013 (Atlanta, GA, Nov 12-17 2013), with Keith Morgenstern (student), URCA, College of Charleston, \$200.
29. September 2013, RPG travel grant to SERMACS 2013 (Atlanta, GA, Nov 12-17 2013), with Kate Diederich (student), URCA, College of Charleston, \$200.
30. September 2013, RPG travel grant to SERMACS 2013 (Atlanta, GA, Nov 12-17 2013), with Jessica Kapp (student), URCA, College of Charleston, \$200.
31. September 2013, RPG travel grant to SERMACS 2013 (Atlanta, GA, Nov 12-17 2013), with Joshua Schmidt (student), URCA, College of Charleston, \$200.
32. Fall 2013 "Expression, purification, and functional characterization of Melf" MAYS Grant, URCA, College of Charleston, with Clayton Ehasz (student), \$ 4,000.
33. Summer 2013 "Chemical rescue of a mutant version of a computationally-designed enzyme" SURF Grant, URCA, College of Charleston, with Joshua Schmidt (student), \$ 6,500.
34. Summer 2013 "Role of the hydrophobic tail in SdsA1 catalysis ", Research Grant, HHMI, College of Charleston, with Keith Morgenstern (student), \$ 4,000.

35. Summer 2013 "Chemical modification of a computationally-designed enzyme", Research Grant, HHMI, College of Charleston, with Kate Diederich (student), \$ 4,000.
36. Summer 2013 "Chemical rescue of mutant version of a computationally-designed enzyme", Research Grant, HHMI, College of Charleston, with Chloe Teichman (high school student), \$ 1,500.
37. Summer 2012 "Micellar Catalysis in the Retroaldol Reaction: Implications for Computational Design of Enzymes" Research Grant, HHMI, College of Charleston, with Michael Epperson (student), \$ 4,000.
38. Summer 2012 "Reactivity of SdsA1, an Alkylsulfatase from *Pseudomonas aeruginosa* ", Research Grant, HHMI, College of Charleston, with William Zierenberg (student), \$ 4,000.
39. Summer 2012 "Structural analysis of a discontinuous group I intron" SURF Grant, URCA, College of Charleston, with Brooklyn Fillingier (student), \$ 6,500.
40. Spring 2012 "Analysis of a Discontinuous RNA Enzyme", MAYS grant, URCA, College of Charleston, with Matthew Knowe (student), \$ 2,500.
41. Fall 2011 "Functional Characterization of SdsA1, an Alkylsulfatase from *Pseudomonas aeruginosa*", Research and Development Grant, College of Charleston, \$ 4,000.
42. Summer 2011 "Expression and Purification of the Alkylsulfatase SdsA1" Research Grant, HHMI, College of Charleston, with James Holt (student), \$ 4,000.
43. Summer 2011 "Testing Enzymatic Reaction Mechanisms Derived from Computation with Chemical Tools: The Hammerhead Ribozyme Case" SURF grant, URCA, College of Charleston, with Thomas Struble (student), \$ 6,500.
44. Spring 2011 "Purification and preliminary kinetic characterization of SdsA1, an alkylsulfatase from *Pseudomonas aeruginosa*" MAYS grant, URCA, College of Charleston, with Avery Zierk (student), \$ 800.

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**PARTECIPAZIONE IN QUALITÀ DI RELATORE A CONGRESSI E CONVEGNI DI INTERESSE INTERNAZIONALE**  
*(inserire titolo congresso/convegno, data, ecc.)*

As Associate Professor

1. Linzel, J.;\* Dunne, J.;\* Giuliano, M.W.; **Forconi, M.** "Introduction of fluoroaromatic probes into peptides and proteins via nucleophilic aromatic substitution" SERMACS 2019, Savannah, GA 10/21/2019 (poster presentation)
2. Reeves, A.E.;\* Fox, J.L.; **Forconi, M.** "Predicting reactivity of homologous sulfohydrolases via bioinformatics" SERMACS 2019, Savannah, GA 10/21/2019 (poster presentation)



3. Taormina, B.;\* Smolenski, E.;\* Callaway, A.;\* **Forconi, M.** "Kinetic isotope effect in the Kemp elimination catalyzed by heme systems" SERMACS 2019, Savannah, GA 10/20/2019 (oral presentation)
4. Dunne, J.;\* Giuliano, M.W.; **Forconi, M.** "Modification of thiols via nucleophilic aromatic substitution" SERMACS 2019, Savannah, GA 10/20/2019 (oral presentation)
5. Dunne, J.; **Forconi, M.** "Modification of thiols via nucleophilic aromatic substitution" SERMACS 2018, Augusta, GA 11/02/2018 (poster presentation)
6. Taormina, B.;\* **Forconi, M.** "Kemp eliminase activity of heme systems" SERMACS 2018, Augusta, GA 11/01/2018 (poster presentation)
7. Reeves, A.;\* Waddell, G.;\* Gilmer, C.;\* Reveral, J.R.;\* **Forconi, M.**; Fox, J.L. "Reactivity of homologous sulfohydrolases" SERMACS 2018, Augusta, GA 11/01/2018 (poster presentation)
8. **Forconi, M.** "Redox pathway for the Kemp elimination" SERMACS 2018, Augusta, GA 10/31/2018 (oral presentation)
9. **Forconi, M.** "New Catalysts for an Old Reaction: Adding Flavor to the Kemp Elimination", Syracuse University, Syracuse, NY, Department of Chemistry, 4/3/2018 (invited talk).
10. **Forconi, M.** "New Catalysts for an Old Reaction: Adding Flavor to the Kemp Elimination", Gainesville, FL, Department of Chemistry, 12/1/2017 (invited talk).
11. **Forconi, M.** "Computational design of enzymes –Are we there yet?" Dipartimento di Scienze Chimiche della Vita e della Sostenibilità Ambientale, Università di Parma, Parma, Italy, 05/29/2017 (oral presentation)
12. **Forconi, M.** "Computational design of enzymes –Are we there yet?" Facoltà di Chimica Industriale, Università di Bologna, Bologna, Italy, 04/07/2017 (oral presentation)
13. Gensemer, C.;\* **Forconi, M.** "Kemp eliminase activity of heme-containing systems" SERMACS 2017, Charlotte, NC, 11/10/2017 (poster presentation).
14. Derryberry, J.;\* **Forconi, M.** "Introduction of fluoroaromatics in proteins via  $S_NAr$ " Charlotte, NC, 11/10/2017 (poster presentation).
15. Gilmer, C.;\* Reveral, J.;\* Waddell, G.;\* Taylor, N.;\* Fox, J.; **Forconi, M.** "Eukaryotic enzyme Bds1 is an alkyl but not an aryl sulfohydrolase" SERMACS 2017, Charlotte, NC, 11/10/2017 (poster presentation)
16. Gilmer, C.;\* Waddell, G.;\* Taylor, N.;\* Reveral, J.;\* **Forconi, M.**; Fox, J. "Substrate specificity and reaction kinetics of two homologous enzymes with sulfohydrolase

activity" SERMACS 2017, Charlotte, NC, 11/10/2017 (oral presentation)

17. **Forconi, M.** "New catalysts for an old reaction: Adding flavor to the Kemp elimination" SERMACS 2017, Charlotte, NC, 11/08/2017 (oral presentation)

As Assistant Professor

18. Derryberry, J.\* Linklore, D.\*; **Forconi, M.** "Introduction of fluoroaromatics in proteins via  $S_NAr$ " SERMACS 2016, Columbia, SC, 10/24/2016 (poster presentation).
19. Waddell, G.\*; Gilmer, C.\*; Reveral, J.\*; **Forconi, M.**; Fox, J." Analysis of SdsA1 and Bds1 sulfohydrolase activity by liquid chromatography-mass spectrometry" SERMACS 2016, Columbia, SC, 10/24/2016 (poster presentation).
20. Gilmer, C.\*; Reveral, J.\*; Waddell, G.\*; Fox, J.; **Forconi, M.** "Analysis of SdsA1 and Bds1 sulfohydrolase activity by NMR and GC-MS" SERMACS 2016, Columbia, SC, 10/24/2016 (poster presentation).
21. Fanning, L.\*; Sanchez, E.\*; **Forconi, M.** "Chance or design: What makes a good kemp eliminase?" SERMACS 2016, Columbia, SC, 10/25/2016 (oral presentation).
22. Sanchez, E.\*; Fanning, L.\*; Howe, K.\*; **Forconi, M.** "Ketosteroid isomerase-catalyzed Kemp elimination" SERMACS-SWRM 2015, Memphis, TN, 11/04/2015-11/07/2015 (oral presentation)
23. Waddell, G.\*; Denman, N.\*; Smith, C.\*; Forconi, M.; Fox, J. "SdsA1 sulfohydrolase and homologous proteins" SERMACS-SWRM 2015, Memphis, TN, 11/04/2015-11/07/2015 (poster presentation)
24. Denman, N.\*; Smith, C.\*; Waddell, G.\*; Fox, J.; **Forconi, M.** "SdsA1: A bioinformatics and kinetic study" SERMACS-SWRM 2015, Memphis, TN, 11/04/2015-11/07/2015 (poster presentation)
25. Fanning, L.\*; Sanchez, E.\*; Howe, K.\*; **Forconi, M.** "Kemp eliminase activity of ketosteroid isomerase: Kinetic behavior of active site mutants" SERMACS-SWRM 2015, Memphis, TN, 11/04/2015-11/07/2015 (poster presentation)
26. Derryberry, J.\*; Mansure, J.\*; Norton-Baker, B.\*; **Forconi, M.** "Introduction of fluoroaromatics in proteins via  $S_NAr$ " SERMACS-SWRM 2015, Memphis, TN, 11/04/2015-11/07/2015 (poster presentation)
27. **Forconi, M.** "Kemp eliminase activity of ketosteroid isomerase" Gordon Research Conference on Enzymes, Coenzymes, and Metabolic Pathways, Waterville Valley, NH, 07/17/2015-07/21/2015 (oral presentation)
28. Denman, N.\*; Smith, C.\*; Waddell, G.\*; Fox, J.; **Forconi, M.** "Why would the Tibetan antelope eat detergents? A story of an enzyme and its (probably unknown) function" Gordon Research Conference on Enzymes, Coenzymes, and Metabolic

Pathways, Waterville Valley, NH, 07/17/2015-07/21/2015 (poster presentation)

29. Sanchez, E.\*; **Forconi, M.** "Solvent, micelles, and random proteins: Are they different from computationally-designed enzymes?" Sixth Southeast Enzyme Conference, Atlanta, GA 4/11/2015 (poster presentation)
30. Denman, N.\*; Smith, C.\*; Waddell, G.\*; Fox, J.; **Forconi, M.** "Why would the Tibetan antelope eat detergents? A story of an enzyme and its (probably unknown) function" Sixth Southeast Enzyme Conference, Atlanta, GA 4/11/2015 (poster presentation)
31. Sanchez, E.\*; **Forconi, M.** "Kemp elimination in micelles, proteins, and non-polar solvents: Comparison to a computationally-designed enzyme" SC-INBRE Meeting, Columbia, SC, 02/29/2015 (poster presentation)
32. Denman, N.\*; Smith, C.\*; Waddell, G.\*; Fox, J.; **Forconi, M.** "Why would the Tibetan antelope eat detergents? A story of an enzyme and its probably unknown function" SC-INBRE Meeting, Columbia, SC, 02/29/2015 (poster presentation).
33. Norton-Baker, B.\*; Reed, C.\*; Kapp, J.\*; **Forconi, M.** "Introduction of FT-IR and  $^{19}\text{F}$  NMR probes in proteins via  $\text{S}_{\text{N}}\text{Ar}$ " SERMACS 2014, Nashville, TN, October 2014 (oral presentation)
34. Sanchez, E.\*; Lu, S.\*; Reed, C.\*; **Forconi, M.** "Kemp elimination in cationic micelles" SERMACS 2014, Nashville, TN, October 2014 (poster presentation)
35. Waddell, G.\*; Martin, E.\*; **Forconi, M.**; Fox, J. "Proteins Homologous to the Bacterial Sulfatase SdsA1" SERMACS 2014, Nashville, TN, October 2014 (poster presentation)
36. Schmidt, J.\*; **Forconi, M.** "Evaluation of computationally-designed enzymes by comparison with model systems" SEC V, Atlanta, GA, April 5, 2014 (oral presentation)
37. **Forconi, M.** "Evaluation of computationally-designed enzymes by comparison with model systems" USCB, Beaufort, SC, March 21, 2014 (oral presentation)
38. **Forconi, M.** "Micellar catalysis as a benchmark for de novo enzymes" Florida State University, Tallahassee, FL, December 3, 2013 (oral presentation)
39. Diederich, K.\*; Teichman, C.\*; Schmidt, J.\*; **Forconi, M.** "Chemical modification of a computationally-designed enzyme" SERMACS 2013, Atlanta, GA, November 2013 (poster presentation)
40. Morgenstern, K.\*; Shea, C.\*; Adamson, N.\*; Zierk, A.\*; Holt, J.\*; **Forconi, M.** "SdsA1: A true alkylsulfatase?" SERMACS 2013, Atlanta, GA, November 2013 (poster presentation)

41. Schmidt, J.\*; Ehasz, C.\*; Epperson, M.\*: **Forconi, M.** "Effect of the hydrophobic environment on the retro-aldol reaction: Comparison to a computationally-designed enzyme" SERMACS 2013, Atlanta, GA, November 2013 (oral presentation)
42. Kapp, J.\*; **Forconi, M.** "Cysteine modification via nucleophilic aromatic substitution" SERMACS 2013, Atlanta, GA, November 2013 (poster presentation)
43. Schmidt, J.\*; Epperson, M.\*; Forconi, M." The retroaldol reaction in micelles: magnitude of hydrophobic interactions and comparison to a computationally-designed enzyme" Bioorganic Chemistry Gordon Research Conference, Andover, NH, June 2013 (poster presentation)
44. Forconi, M. "Computationally Designed Enzymes: Are We There Yet?" SC INBRE Spring Symposium 2013, Columbia, SC, April 20, 2013 (oral presentation).
45. Schmidt, J.\*; Forconi, M. "Testing Strengths and Limitations of Computationally-Designed Enzymes: What is the Origin of Catalysis?" SC INBRE Spring Symposium 2013, Columbia, SC, April 20, 2013 (poster presentation).
46. Forconi, M.; Adamson, N.\* "Functional Characterization of SdsA1, an Alkylsulfatase Secreted by *Pseudomonas aeruginosa*" SC INBRE Spring Symposium 2013, Columbia, SC, April 20, 2013 (poster presentation).
47. Forconi, M.; Struble, T.J.\* "Testing Structural and Computational Models of Enzymes Active Sites through Chemical Modifications: Metal Ion Interactions in the Hammerhead Ribozyme" Nucleic Acid Enzymes FASEB Meeting, Snowmass Village, CO, June 2012 (poster presentation).
48. Struble, T.J.\*; Forconi, M. "Testing Structural and Computational Models of Enzymes Active Sites through Chemical Modifications: Metal Ion Interactions in the Hammerhead Ribozyme" Third Southeast Enzyme Conference, Atlanta, GA, April 2012 (poster presentation).
49. Knowe, M.\*; Forconi, M. "Analysis of a Discontinuous RNA Enzyme" Third Southeast Enzyme Conference, Atlanta, GA, April 2012 (poster presentation).
50. Zierk, A.\*; Holt, J.\*; Forconi, M. "Functional Characterization of SdsA1, an Alkylsulfatase from *Pseudomonas aeruginosa*" Third Southeast Enzyme Conference, Atlanta, GA, April 2012 (poster presentation).
51. Struble, T.J.\*; Forconi, M. "Testing Structural and Computational Models of Enzymes Active Sites through Chemical Modifications: Metal Ion Interactions in the Hammerhead Ribozyme" SC-INBRE Research Symposium 2012, Columbia, SC, February 2012 (poster presentation).
52. Knowe, M.\*; Forconi, M. "Analysis of a Discontinuous RNA Enzyme" SC-INBRE Research Symposium 2012, Columbia, SC, February 2012 (poster presentation).

53. Zierk, A.\*; Holt, J.\*; Forconi, M. "Functional Characterization of SdsA1, an Alkylsulfatase from *Pseudomonas aeruginosa*" SC-INBRE Research Symposium 2012, Columbia, SC, February 2012 (poster presentation).

*Presentations from post-doctoral, graduate, and undergraduate experiences.*

54. **Forconi, M.** "Unraveling Single Interactions and Complex Networks in the Group I Ribozyme by Atomic Mutagenesis" Invited presentation at the RNA Club, Department of Biochemistry and Molecular Biology, MUSC, Charleston, SC, November 2010 (oral presentation).
55. **Forconi, M.;** Sengupta, R.N.; Piccirilli, J.A.; Herschlag, D. "Structure and function converge to identify a hydrogen bond in the group I ribozyme active site" Nucleic Acid Gordon Conference, Biddeford, ME, June 2009 (poster presentation).
56. **Forconi, M.** "Metal ions in RNA catalysis: Active site and beyond" Università di Padova, Italy, January 2008 (oral presentation).
57. **Forconi, M.;** Lee, J.; Hougland, J.L.; Lee, J.K.; Kravchuk, A.V.; Piccirilli, J.A.; Herschlag, D. "Perturbation of metal ions binding sites reveal a high degree of communication in a catalytic RNA" RNA Society Annual Meeting, Madison, WI, May 2007 (oral presentation) .
- ❖ *This contribution was selected for the Organizer's Highlight Section of the meeting.*
58. **Forconi, M.;** Lee, J.; Hougland, J.L.; Piccirilli, J.A.; Herschlag, D. "Functional identification of ligands for 'catalytic' metal ions in group I introns" RNA Society Annual Meeting, Seattle, WA, June 2006 (poster presentation).
59. **Forconi, M.** "Functional identification of ligands for 'catalytic' metal ions in group I introns" RNA Club, San Francisco, CA, March 2006 (oral presentation).
60. **Forconi, M.** "RNA catalysis: towards a detailed snapshot of the transition state" Department of Biology, University of Bologna, Italy, October 2005 (oral presentation).
61. **Forconi, M.;** Herschlag, D. "Exploring the promiscuous potential of the *Tetrahymena* ribozyme: reactivity of a methylphosphonate diester" 8<sup>th</sup> Enzyme Mechanism Conference, Pacific Grove, CA, USA, January 2005 (poster presentation).
62. **Forconi, M.;** Hengge, A.C.; Humphry, T.; Williams, N.H. "The mechanism of phosphate ester hydrolysis in a model of metallophosphatases as revealed by kinetic isotope effects", ISBOC VI, Toronto, ON, Canada, August 2002 (poster presentation).
63. **Forconi, M.;** Williams, N.H. "Effective cooperative interactions in mimicking metallophosphatases", ICPOC XVI, San Diego, CA, USA, August 2002 (poster presentation).

64. **Forconi, M.**; "Models for metallophosphatases", Department of Biochemistry, Cambridge University, UK, May 2002 (oral presentation).
65. **Forconi, M.**; Williams, N.H. "Mimicking metallophosphatases through efficient multiple interactions", WISOR XI, Bressanone, Italy, January 2002 (poster presentation).
66. Hengge, A.C.; Humphry, T.; **Forconi, M.**; Williams, N.H. "Mechanism of reaction of phosphate esters coordinated to a model of dinuclear metallophosphatases", 22<sup>nd</sup> ACS meeting, Chicago, IL, USA, August 2001 (poster presentation).
67. **Forconi, M.**; Williams, N.H. "Efficient phosphate ester hydrolysis using multiple metal ions", NACON V, Sheffield, UK, June 2001 (poster presentation).

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#### **ATTIVITÀ GESTIONALI, ORGANIZZATIVE E DI SERVIZIO**

**INCARICHI DI GESTIONE E AD IMPEGNI ASSUNTI IN ORGANI COLLEGIALI E COMMISSIONI, PRESSO RILEVANTI ENTI PUBBLICI E PRIVATI E ORGANIZZAZIONI SCIENTIFICHE E CULTURALI, OVVERO PRESSO L'ATENEO O ALTRI ATENEI**

*(inserire incarico/impegno, ente, data, ecc.)*

- Associate Chair of the Chemistry and Biochemistry Department, College of Charleston (2018-present)
- Ad-hoc Teaching Effectiveness and Mentoring Committee, member, College of Charleston, 2020-present.
- Ad-hoc Committee on Gun Violence, member, College of Charleston, 2021-present.
- Research and Development Committee, Member, College of Charleston 2019-present
- Library Committee, Member, College of Charleston, 2016-2018
- Faculty Advisor to the President Committee, Member, College of Charleston, August 2011-April 2014
- Candidate for At-Large Senator, February 2014.
- Departmental Space Committee, Department of Chemistry and Biochemistry, College of Charleston, 2015-2016.
- Departmental Adjuncts Committee, Department of Chemistry and Biochemistry, College of Charleston, 2014-2015.
- Departmental Safety Committee, Chair, Department of Chemistry and Biochemistry, College of Charleston, September 2018-present.
- Departmental Safety Committee, Member, Department of Chemistry and Biochemistry, College of Charleston, September 2010-2014.
- Departmental Instrument Committee, Member, Department of Chemistry and Biochemistry, College of Charleston, September 2010-August 2012; May 2016-2018
- Departmental T&P Committee for Jennifer Fox, Chair, Department of Chemistry and Biochemistry, College of Charleston, May 2016- 2018.

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| - Departmental T&P Committee for Michael Giuliano, Member, Department of Chemistry and Biochemistry, College of Charleston, May 2016- present. |
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**ATTIVITÀ CLINICO ASSISTENZIALI**

*(indicare, data, durata, ruolo, ente presso il quale si è prestata attività assistenziale, ecc.)*

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Data

3 Giugno 2021

Luogo

Charleston, SC, USA